Communication & Aviation Leader Reduces Test Times from Eight Hours to Seconds

APCON INTELLAPATCH™ Physical Layer Switch Increases Repeatability and Improves Quality of Service

Challenge:

A leading provider of electronic and communication solutions for the aviation industry employed a time-consuming process for reconfiguring a test bed used for Gigabit Ethernet-based network modules used in commercial airlines. Company management presented a challenge to create a faster, less expensive test process, while increasing repeatability and decreasing human error.

Solution:

Engineering incorporated the APCON INTELLAPATCH™ physical layer switch and application software to automate reconfiguration and to ensure that products were ready to ship on time.

Benefits:

- Reduced test times by 90%
- Reduced costs of performance verification tests
- Electronic reconfiguration eliminated manual errors and greatly improved the ability to plan, predict, and schedule testing

Overview

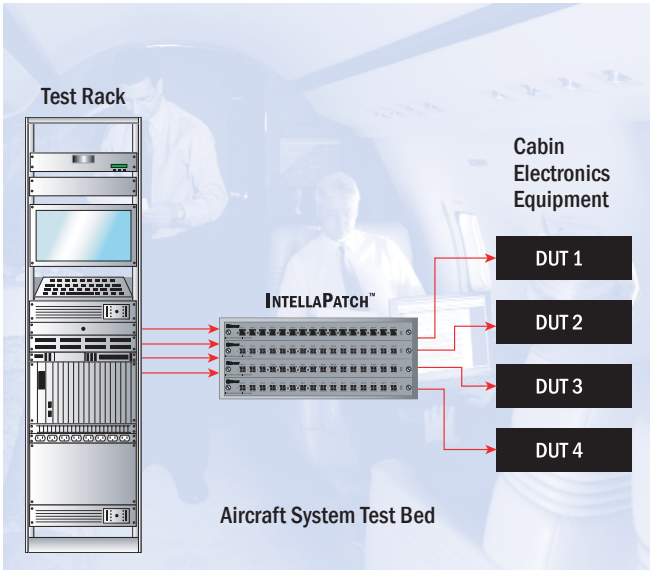
The business aviation industry continues to enjoy year-over-year growth. In-cabin electronic systems offer the business passenger the latest technologies for in-flight connectivity, mobile office tools, and entertainment. To ensure quick delivery and high performance, vendors in this industry perform extensive testing prior to shipping every custom system.

Challenge

On-board network uptime and quality are critical to business aviation customers who count on cabin management and communication systems to use travel time to the fullest. A leading supplier of in-cabin electronics produces several systems that make it “easier than ever for business jet passengers to remain connected to the world below.” The systems operate over an on-board Ethernet network at either 100 Mb/s or 1 Gb/s.

To ensure the highest quality, the verification lab performs both systems integration testing on components in the design phase and performance verification testing on complete systems prior to shipping to customers. To test their modules, the lab employed a manual patch panel. Testing each system required configuring over 100 patches.

Test times typically ran from four to eight hours, depending, in part, on the speed and accuracy with which test personnel were able to wire and reconfigure the necessary physical connections within the network. Tests could run for hours before an engineer might detect a set-up error, at which time the entire process would have to be restarted.



The testing group was challenged by management to reduce test and reconfiguration time to less than one hour. To meet this challenge, the senior systems engineer needed a new test strategy.

Solution

Test times were reduced by up to 90 percent by combining Apcon's flagship product, the Apcon IntellaPatch physical layer switch, application software, and test scripts. Human error during setup was virtually eliminated by adding an Apcon physical layer switch into the test bed. The Apcon IntellaPatch enabled test engineers to physically cable devices under test to the switch once and reconfigure different test topologies in seconds. Test engineers were able to assign specific test topologies to presets and build the test infrastructure with the press of one button. Greater time savings were realized by automating connectivity of test devices to the test head through scripting. The time required to configure the test bed dropped from days to seconds.

The senior systems engineer exceeded the management challenge beyond all expectations, implementing time savings far greater than the goal of reconfiguration in under one hour.

Apcon Products Chosen

(1) ACI-2054-C00
144 Port Switch Chassis

(9) ACI-2052-E16
Two 10/100/1000 Copper Ethernet Blades

Benefits

The Apcon IntellaPatch solution transformed the test bed setup from an error-prone, time-consuming ordeal to a fast, reliable process.

"The IntellaPatch™ allows us to reduce human error in setup. That means faster time to destination for our product and satisfied customers."

- Senior Systems Engineer

Apcon IntellaPatch switches enable the company's test engineers to reconfigure test topologies quickly and efficiently using its "wire-once technology." The Apcon IntellaPatch any-to-any connectivity enables reconfiguration of all physical layer connections to all other connections. Tedious, error-prone manual cable pulling and reconfiguration were completely eliminated by electronic reconfiguration which was accomplished in minutes within the test bed.

The electronic test bed, now using Apcon's IntellaPatch switch, means faster delivery time of integrated systems to the aircraft. Cabin electronic systems customers waiting to receive their newly configured $40M aircraft expect on-time delivery of working systems. The IntellaPatch physical layer switch provided this vendor with a clear advantage in it's commitment to provide exceptionally high levels of cabin electronics performance.

Apcon, Inc. provides innovative networking hardware and software solutions that improve management of physical layer connections. Based in Portland, Ore., the company specializes in physical layer switches, network management software, and SCSI support products. Network connectivity products from Apcon provide cost saving, easy-to-use solutions for network engineers, system administrators, and IT managers. Apcon products are sold worldwide through a network of representatives, resellers, and distributors. Visit our Web site at www.apcon.com.

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